

REMARKS

The subject patent application includes Claims 1 through 15. Claims 1, 8, 9 and 11 are presented in independent form.

Only two grounds of rejection are presently pending in the subject patent application. Specifically, Claims 8 through 12 have been rejected under 35 U.S.C. 102 (b) as allegedly being anticipated by U.S. Patent No. 5,410,727 (Jaffe et al.). Claims 1 through 7 and 13 to 15 have been rejected under 35 U.S.C. 103 as allegedly being obvious from the combination of Jaffe et al. and U.S. Patent No. 5,448,706 (Fleming et al.). As seen from the analysis below, all pending claims patentably define over the prior art, and, therefore, the two grounds of rejection referred to above must be withdrawn.

ANTICIPATION

“Anticipation...requires that the *identical invention that is claimed* was previously known to others and thus is not new....” *Continental Can v. Monsanto*, 948 F.2d 1264, 1267 (Fed. Cir. 1991)(emphasis added). *A single reference must have each and every element of the claim.* See *Advanced Display Systems Inc. v. Kent State University*, 54 USPQ 2d 1673, 1679 (Fed. Cir. 2000)(“Accordingly, invalidity by anticipation requires that the four corners of *a single, prior art document* describe every element of the claimed invention, expressly or inherently, such that *a person of ordinary skill in the art could practice the invention without undue experimentation.*”)(emphasis added); See also, *PPG Industries, Inc. v. Guardian Industries Corp.*, 37 USPQ 2d 1618, 1624 (Fed. Cir. 1996)(“To anticipate a claim, a reference must disclose every element of the challenged claim and *enable one skilled in the art to make the anticipating subject matter.*”)(emphasis added)

Claim 8 is not anticipated by Jaffe et al. as is readily evident from the Examiner's concessions. Specifically, the Examiner concedes that Jaffe et al. does not disclose a "digital subscriber line system." (See Official Action dated June 30, 2005, p. 9, ¶ 6) Contrary to the Examiner's assertion, the recitation "digital subscriber line system" appearing in the preamble of Claim 8 is a limitation as the preamble provides context essential to the understand the meaning of terms in the body of the claim. Specifically, Claim 8 reads as follows:

8. A method of processing *a plurality of data streams* in a digital subscriber line (DSL) system, comprising the acts of:

calculating a plurality of input addresses for *said plurality of data streams* based on a plurality of input base addresses and a plurality of input offset addresses;

storing a plurality of data from *said plurality of data streams* according to said plurality of input addresses;

calculating a plurality of processor addresses for the stored plurality of data based on a plurality of processor base addresses and a plurality of processor offset addresses;

processing, using a single instruction, the stored plurality of data according to said plurality of processor addresses;

calculating a plurality of output addresses for the processed plurality of data based on a plurality of output base addresses and a plurality of output offset addresses;

outputting the processed plurality of data according to said plurality of output addresses; and

updating said plurality of input base addresses, said plurality of processor base addresses, and said plurality of output base addresses. (emphasis added)

The preamble of Claim 8 expressly refers to "a plurality of data streams." Further, the first two clauses appearing in the body of Claim 8 include the recitation "*said plurality of data streams.*" (emphasis added) The preamble of Claim 8 provides the only antecedent

basis for the two recitations “said plurality of data streams” appearing in the body of the claim. Accordingly, the preamble is a limitation of Claim 8 as it provides the context essential to the understanding of the meaning of claim terms including the recitation “plurality of data streams.” *C.R. Bard, Inc. v. M3Sys.*, 157 F.3d 1340, 1350 (Fed. Cir. 1998)(“[A] preamble usually does not limit the scope of the claim *unless the preamble provides antecedents for ensuing claim terms and limits the claim accordingly.*”) (emphasis added); see also; *Seachange International, Inc. v. C-Cor, Inc.*, 413 F.3d 1361 (Fed. Cir. (2005)(“*The preamble provides the only antecedent basis and thus the context essential to understand the meaning of ‘processor system’; therefore, the preamble, including the phrase ‘distributed computer system,’ limits the scope of the claimed invention.*”)(emphasis added); and, *NTP, Inc., v. Research In Motion, Ltd.*, 392 F.3d 1336, 1358-1359 (Fed. Cir. 2004)

The Examiner’s reliance on *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F. 2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) is misplaced. In *Kropa*, the Court found the preamble to be a limitation. The Court explained in *Kropa* that *where the body of the claim is complete without the preamble, then the preamble is generally not a limitation. The body of Claim 8 is not complete as it expressly relies upon the preamble to provide antecedent basis for claim terms. In re Hirao* is readily distinguishable from the present case, as the preamble of the process claim at issue in that case was not needed to provide antecedent basis for any limitations appearing in the body of the claim.

The preamble of Claim 8 is a limitation of the claim as is readily evident from the controlling case law of the United Court of Appeals for the Federal Circuit. As such,

Jaffe et al. admittedly does not anticipate Claim 8 since Jaffe et al. does not disclose expressly or inherently a DSL system. Notably, the Examiner did not impose any alternative ground of rejection including but not limited to an obviousness rejection pursuant to 35 U.S.C. § 103 based on Jaffe et al. In this regard, Applicants note the requirement that Office Actions be complete. See 37 CFR § 1.104 (b) (“The Examiner’s action will be complete as to all matters...”). Accordingly, the Examiner necessarily concedes that the only possible basis for a rejection of Claim 8 is under 35 U.S.C. 102 based on Jaffe et al. Because the rejection under 35 U.S.C. 102 is legally flawed, Applicants respectfully request that Claim 8 be allowed in all respects.

Claim 15 depends from Claim 8, and, therefore, is allowable for similar reasons. Moreover, Claim 15 recites additional aspects that are not taught or suggested by the prior art of record.

Applicants’ invention as recited in Claim 9 is directed to a single instruction, multi-data architecture for controlling the processing of plurality of data streams including a memory that stores data from the plurality of data streams received from a plurality of channels. The SIMD architecture also includes a processor operatively coupled with the memory that processes data from the plurality of data streams. The SIMD architecture further includes a controller that controls the processor wherein storing data in the memory *decouples a first operating rate of the processor and a second operating rate of the plurality of channels*.

Jaffe et al. does not anticipate Claim 9 as it fails to disclose either expressly or inherently a system wherein the storing of data in the memory decouples a first operating rate of a processor and a second operating rate of the plurality of channels. The

Examiner's reliance on col. 7, lines 40 to 59 of Jaffe et al. is misplaced as this passage as well as all other passages of Jaffe et al. fails to disclose expressly or inherently a system wherein the storing of data in the memory decouples a first operating rate of a processor and a second operating rate of the plurality of channels. Jaffe et al. does not teach or suggest the decoupling of processing rates. Accordingly, Claim 9 patentably defines over the prior art of record.

Claims 10 and 14 depend from Claim 9, and, therefore, are allowable for similar reasons. Moreover, Claims 10 and 14 recite additional aspects that are not taught or suggested by the prior art of record.

Applicants' invention, as recited in Claim 11, is directed to a method of controlling processing of multiple data streams in a single instruction, multi data (SIMD) architecture including the steps of: storing data from the multiple data streams in a memory as the data is received; at regular intervals, determining whether all of the data has been received; providing a signal indicating that all of the data has been received; using the signal to determine which of the data to process; and processing data in accordance with the signal.

The method of Claim 11 makes the processing rate of the data dependent on the arrival rate of the input data. This method allows each channel to be decoupled from the other channels and will process independently based on the status of data in a corresponding buffer. Jaffe et al. does not teach or suggest making the processing rate dependent on the arrival rate of the input data. Accordingly, Claim 11 patentably defines over the prior art of record.

Claims 12 and 13 depend from Claim 11, and, therefore, are allowable for similar reasons. Moreover, Claims 12 and 13 recite additional aspects that are not taught or suggested by the prior art of record.

OBVIOUSNESS

The law is well established on the issue of combining two or more references to render a claim unpatenable under 35 U.S.C. § 103 as is evident from the controlling case law provided below.

“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” In re Fine, 837 F.2d 1071, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). See also Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 USPQ 543, 548 (Fed. Cir. 1985)(“From its discussion of the prior art it appears to us that the court, guided by the defendants, treated each reference as teaching one or more of the specific components for use in the Feil system, although the Feil system did not exist. Thus the court reconstructed the Feil system, using the blueprint of the Feil claims. As is well established, this is legal error.”) *Accordingly, hindsight reconstruction is impermissible.*

“When an obviousness determination is based on multiple references, there must be a showing of some ‘teaching, suggestion, or reason’ to combine the references...Although a reference need not expressly teach that the disclosure contained therein should be combined with another...the showing of combinability, in whatever form, must be ‘*clear and particular.*’” Winner International Royalty Corp. v. Wang, 202 F.3d 1340, 1348-1349 (Fed. Cir. 2000)(emphasis added). Hence, *there must be a clear and particular showing of the combinability of two or more references.*

The sole grounds of rejection of Claims 1 through 7 and 13 through 15 is 35 U.S.C. 103 based on the combination of Jaffe et al. and Fleming et al. Because the necessary teaching, suggestion or motivation to combine these references is lacking, Claims 1 through 7 and 13 through 15 patentably define over the prior art of record.

Jaffe et al. is directed to an input/output system for a massively parallel, single instruction, multiple data (SIMD) computer providing for the simultaneous transfer of data between a host computer input/output system and all SIMD memory devices. Admittedly, Jaffe et al. does not disclose a circular buffer. Further, Jaffe et al. does not disclose processing that would utilize a circular buffer. Fleming et al. is directed to an address generator for multi-channel circular-buffer style processing. Fleming et al. is directed at overcoming deficiencies in circular buffer address management in high speed multi-channel environments. See Fleming et al., col. 2, lines 53 to 64. There is simply no objective teaching, suggest or motivation to modify Jaffe et al. to include a circular buffer when Jaffe et al. has no need for such a buffer. The only way the proposed combination can be made is through the use of hindsight reconstruction. Accordingly, the rejection based on the combination of Jaffe et al. and Fleming et al. must be withdrawn.

Further, even if the unobvious combination of Jaffe et al. and Fleming et al. is made, Applicants' invention is still not rendered obvious. Specifically, Claim 1 is directed to a single instruction, multiple data (SIMD) controller for processing a plurality of data streams in a *digital subscriber line* system. The preamble of Claim 1, like the preamble of Claim 8, provides antecedent basis for the "said plurality of data streams" limitation appearing in the body of Claim 1. Accordingly, the preamble of Claim 1 is a

limitation of the claim. Jaffe et al. and Fleming et al. fail to teach or suggest a DSL system. Accordingly, Applicants' invention, as recited in Claim 1, patentably defines over the prior art of record.


Claims 2 through 7 depend directly or indirectly from Claim 1 and, therefore, are allowable for similar reasons. Further, these claims recite additional features of Applicants' invention that are not taught or suggested by the prior art of record.

Applicants respectfully submit that the subject patent application is in condition for allowance. Hence, Applicants request that the subject patent application be passed to issuance without delay.

It is believed that no additional fees are due. However, should that determination be incorrect, the Commissioner is hereby authorized to charge any deficiencies to Deposit Account No. 50-0562 and notify the undersigned in due course.

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Respectfully submitted,


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